



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/583,691	08/08/2006	Noriyuki Asahara	HEI-018	3516
32628	7590	03/26/2008	EXAMINER	
KANESAKA BERNER AND PARTNERS LLP			ADDISU, SARA	
1700 DIAGONAL RD				
SUITE 310			ART UNIT	PAPER NUMBER
ALEXANDRIA, VA 22314-2848			3722	
			MAIL DATE	DELIVERY MODE
			03/26/2008	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/583,691	ASAHARA ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	SARA ADDISU	3722	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 8/8/06.  
 2a) This action is **FINAL**.                    2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-11 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_\_ is/are allowed.  
 6) Claim(s) 1-7 and 9-11 is/are rejected.  
 7) Claim(s) 8 is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on 20 June 2006 is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____ .                                    |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>6/20/06</u> .   | 6) <input type="checkbox"/> Other: _____ .                        |

## DETAILED ACTION

### ***Specification***

1. The abstract of the disclosure is objected to because it is in claim format and contains legal phraseology, e.g. "comprising".... Correction is required. See MPEP § 608.01(b).

### ***Drawings***

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "a bolt coupling the position member" (as claimed in claim 3) and the "spacer" (as claimed in claim 4) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New

Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sasaki et al. (USP 6,665,579), in view of Mihara et al. (JP 58132402).

SASAKI ET AL. teaches an automatic lathe which has a tool post (114) and a spindle (112) configured to relatively move in a spindle axis line direction and which machines a material (W) gripped by a chuck (117) at the tip of the spindle by use of a tool installed on the tool post, the automatic lathe, characterized by comprising: a head stock (113) configured to move forward and backward; the spindle (112) rotatably supported on the head stock and having a through-hole which allows the rod-like material (W) to be inserted there through; the tool post (114) equipped with the tool to

machine the material gripped by the chuck of the spindle; a rotatable guide bush (116) ('579, figure 1). SASAKI ET AL. also teaches head stock (113) which can move forward and backward in the same direction as the Z axis and spindle (112) being rotatably supported by the headstock (i.e. teaches spindle moving and fixing means) ('579, col. 1, lines 28-30). Furthermore, regarding claim 6, SASAKI ET AL. teaches transmission means (i.e. pulley (121b) rotated by a driving of motor (121a), and a belt (121c) running around the pulley (121b)) ('579, col. 2, lines 3-6). Regarding claim 5, SASAKI ET AL. teaches, toolpost base (110) which supports the tool post (114) ('579, figure 1). Regarding claim 7, SASAKI ET AL. teaches attachment (123a) fitted and fixed to the guide member and tip of the spindle (112).

However, SASAKI ET AL. fails to teach a guide bush support table.

MIHARA ET AL. teaches an automatic lathe having a headstock (3), spindle (3), guide bush (16) detachably fitted to a guide member supported on a guide bush support table (17) ('103, figures 1 & 2 and abstract). MIHARA ET AL. also teaches guide rails (2) for guiding the guide bush support table (17) backwards and forwards at a specified position on the bed (1). (note: although MIHARA ET AL. does not teach a support table coupled to the guide bush support table, it is old to have a support table such a carriage). Furthermore, MIHARA ET AL. is silent about spacers, however, it is known in a lathe environment to have spacers to prevent compensator misalignment.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify SASAKI ET AL. such that it has a guide bush

support table, as taught by MIHARA ET AL. for the purpose of preventing bending deformation of a work piece ('103, abstract).

4. Claims 9-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sasaki et al. (USP 6,665,579), in view of Mihara et al. (JP 58132402) and further in view of Uchiumi et al. (JP 5-280532).

The modified device of SASAKI ET AL. teaches an automatic lathe having a tool post (114), a spindle (112), a chuck (117), a head stock (113), guide bush (116) and guide bush support table, as set forth in the above rejection.

However, the modified device of SASAKI ET AL. is silent about thermal expansion absorption member.

Uchiumi et al. teaches a spindle device whereby the main spindle head (1) and the rear bearing case (11) have a radial clearance (12) in relation to the inner housing (2) such that the thermal expansion of the main spindle is absorbed and a prescribed pressurization is always acting on a bearing by moving a rear bearing case in an axial direction freely and giving an elastic force into a rear direction ('532, figure 1 and abstract)

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify SASAKI ET AL. such that it has a thermal

expansion absorption member, as taught by Uchiumi et al. for the purpose of improving the stability of the thermal displacement of a spindle tip in the main spindle device of a machine tool ('532, abstract).

***Allowable Subject Matter***

Claim 8 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sara Addisu at (571) 272-6082. The examiner can normally be reached on 8:30 am - 5 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Monica Carter can be reached on (571) 272-4475. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should

you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Sara Addisu/

Examiner, Art Unit 3722

3/12/08

/Monica S. Carter/  
Supervisory Patent Examiner, Art Unit 3722